

Remarks

Claims 1 and 19 have been amended. Support for the amendments may be found throughout the as-filed specification. Applicant believes no new subject matter has been added. Accordingly, claims 1-3, 5-20, and 22-48 are currently pending, of which claims 6, 13, 14, 26, 31, 33, 41-43 and 48 are withdrawn. Reconsideration and allowance of the present application based on the following remarks are respectfully requested.

As a preliminary matter, Applicant wishes to thank the Examiner for the indication of allowable subject matter in claims 10, 11, 24 and 40.

In addition, Applicant submits that claims 1, 19 and 28 are generic of at least one or more claims in this application. Therefore, upon allowance of claims 1, 19 and 28, Applicant respectfully requests rejoinder of claims 6, 13, 14, 26, 31, 33, 41-43 and 48, which claims include all the limitations of an allowable claim. See MPEP § 821.04.

Rejections under 35 U.S.C. § 102

Claims 1-3, 7-9, 12, 15-20, 22, 23, 25, 27 and 44-47 were rejected under 35 U.S.C. § 102(e) as allegedly being anticipated by U.S. Patent Application Publication No. 2006/0023181 to Novak ("Novak '181"). Applicant traverses.

Applicant submits that the cited portions of Novak '181 fail to teach or disclose a lithographic apparatus comprising, *inter alia*, a barrier configured to collect liquid escaping from the localized area, the barrier surrounding and spaced apart from the substrate and comprising a projection which projects out above an upper surface of the substrate when the substrate is held on the substrate table and a groove recessed into an upper surface of the substrate table, as recited in claim 1; and fail to teach or disclose a device manufacturing method comprising, *inter alia*, collecting liquid escaping from the localized area with a barrier, the barrier surrounding and spaced apart from the substrate and comprising a projection which projects out above an upper surface of the substrate when the substrate is held on the substrate table and a groove recessed into an upper surface of the substrate table, as recited in claim 19.

For example, as acknowledged by the Office Action, the cited portions of Novak '181, at most, disclose that the boundary region 280 of the substrate table may be approximately the same height as the top of the wafer 30. See Office Action pg. 3. Therefore, the cited portions of Novak '181 do not disclose or teach a projection which projects out above an upper surface of the substrate.

Therefore, for at least the above reasons, Applicant submits that the cited portions of Novak '181 fail to teach or disclose each and every feature recited by claims 1 and 19. Claims 2, 3, 7-9, 12, 15-18, 20, 22, 23, 25, 27 and 44-47 depend from claims 1 and 19 and are patentable for at least the same reasons provided above related to claims 1 and 19, and for the additional features recited therein. As a result, Applicant respectfully submits that the rejection under 35 U.S.C. §102(e) of claims 1-3, 7-9, 12, 15-20, 22, 23, 25, 27 and 44-47 over Novak '181 should be withdrawn and the claims be allowed.

Claims 1, 2, 12, 15-20, 25, 27, 28, 30, 32, 35-38 and 44-47 were rejected under 35 U.S.C. § 102(e) as allegedly being anticipated by U.S. Patent Application Publication No. 2005/0134815 to Van Santen et al. ("Van Santen '815"). Applicant traverses.

Applicant submits that the cited portions of Van Santen '815 fail to teach or disclose a lithographic apparatus comprising, *inter alia*, a liquid supply system configured to supply a liquid to substantially only a localized area of the substrate, of the substrate table, or of both, to at least partly fill a space between the projection system and the substrate, the substrate table, or both, wherein the localized area is less than the area of a surface of the whole substrate, as recited in claims 1 and 28. Similarly, Applicant submits that the cited portions of Van Santen '815 fail to teach or disclose a device manufacturing method comprising, *inter alia*, providing a liquid to substantially only a localized area of a substrate, of a substrate table, or of both, to at least partly fill a space between a projection system and the substrate, the substrate table, or both ... wherein the localized area is less than the area of a surface of the whole substrate, as recited in claim 19.

For example, the cited portions of Van Santen '815 do not disclose that only a localized area of the substrate, of the substrate table, or of both, is covered with liquid, wherein the localized area is less than the area of a surface of the whole

substrate. Instead, paragraph [0053] of Van Santen '815 discloses that immersion fluid 5 flows out from under the barrier member 10 such that the entire substrate W and/or wafer table WT appear to be covered with immersion fluid 5. See also Figure 4 of Van Santen '815.

Therefore, for at least the above reasons, Applicant submits that the cited portions of Van Santen '815 fail to teach or disclose each and every feature recited by claims 1, 19 and 28. Claims 2, 12, 15-18, 20, 25, 27, 30, 32, 35-38 and 44-47 depend from claims 1, 19 and 28 and are patentable for at least the same reasons provided above related to claims 1, 19 and 28, and for the additional features recited therein. As a result, Applicant respectfully submits that the rejection under 35 U.S.C. §102(e) of claims 1, 2, 12, 15-20, 25, 27, 28, 30, 32, 35-38 and 44-47 over Van Santen '815 should be withdrawn and the claims be allowed.

Rejections under 35 U.S.C. § 103

Claims 3, 7-9, 22, 23, 29, 34, 39, 46 and 47 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Van Santen '815, as applied to claims 1, 19 and 28 above, and further in view of Novak '181. Applicant traverses.

Applicant submits that Van Santen '815 may not be used in formulating a rejection under 35 U.S.C. § 103. For example, Van Santen '815 was filed on December 23, 2003 and published on June 23, 2005 (i.e., after the filing date of the present application on April 14, 2004), which means that Van Santen '815 appears only to be available as prior art under 35 U.S.C. § 102(e), (f) and/or (g).

Further, Applicant respectfully submits that the subject matter of Van Santen '815 and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

Thus, without agreeing or acceding to the propriety or the merits of the rejection and while preserving the right to distinguish over the cited reference, Applicant submits that, pursuant to 35 U.S.C. §103(c), Van Santen '815 is disqualified as prior art under 35 U.S.C. §103(a).

Therefore, for at least the above reasons that Van Santen '815 is unavailable as prior art under 35 U.S.C. §103(a), Applicant respectfully requests that the rejection of claims 3, 7-9, 22, 23, 29, 34, 39, 46 and 47 under 35 U.S.C. §103(a) over Van Santen '815 in view of Novak '181 be withdrawn and the claims be allowed.

Claim 5 was rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Novak '181 in view of either U.S. Patent Application Publication No. 2002/0020821 to Van Santen et al. ("Van Santen '821"), U.S. Patent Application Publication No. 2006/0023182 to Novak et al. ("Novak '182") or U.S. Patent No. 6,952,253 to Lof et al ("Lof"). Applicant traverses this rejection.

Claim 5 depends from claim 1. As discussed above, the cited portions of Novak '181 fail to disclose or render obvious each and every feature of claim 1, from which claim 5 depends.

Further, even assuming *arguendo* that the cited portions of Novak '181 are properly combinable with the cited portions of Van Santen '821 and/or Novak '182 (which Applicant does not concede), Applicant submits that the cited portions of Van Santen '821 and Novak '182 do not overcome the shortcomings of the cited portions of Novak '181. For example, the cited portions of Van Santen '821 and Novak '182 make no mention or suggestion of a barrier surrounding and spaced apart from the substrate and comprising a projection which projects out above an upper surface of the substrate when the substrate is held on the substrate table.

In addition, Applicant submits that Lof may not be used in formulating a rejection under 35 U.S.C. § 103. For example, Lof was filed on November 12, 2003 and issued on October 4, 2005 (i.e., after the filing date of the present application of April 14, 2004), which means that Lof appears only to be available as prior art under 35 U.S.C. § 102(e), (f) and/or (g).

Further, Applicant respectfully submits that the subject matter of Lof and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

Thus, without agreeing or acceding to the propriety or the merits of the rejection and while preserving the right to distinguish over the cited reference, Applicant submits that, pursuant to 35 U.S.C. §103(c), Lof is disqualified as prior art under 35 U.S.C. §103(a).

Therefore, for at least the above reasons, Applicant submits that a *prima facie* case of obviousness has not been established and that the cited portions of Novak '181, Van Santen '821, Novak '182, Lof, or a proper combination thereof fail to disclose or render obvious each and every feature recited by claim 1. Claim 5

depends from claim 1 and is patentable for at least the same reasons provided above related to claim 1, and for the additional features recited therein. As a result, Applicant respectfully submits that the rejection under 35 U.S.C. §103(a) of claim 5 over Novak '181 in view of either Van Santen '821, Novak '182 or Lof should be withdrawn and the claim be allowed.

Claims 1-3, 7-9, 12, 15-23, 25, 27-30, 32, 34-39 and 44-47 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Novak '181 in view of International (PCT) Patent Application Publication No. WO 99/49504 to Fukami et al. ("Fukami"). Applicant traverses.

Claims 1 and 19

As discussed above, the cited portions of Novak '181 fail to disclose or otherwise render obvious each and every feature of claims 1 and 19.

Further, even assuming *arguendo* that the cited portions of Novak '181 are properly combinable with the cited portions of Fukami (which Applicant does not concede), Applicant submits that the cited portions of Fukami do not overcome the shortcomings of the cited portions of Novak '181.

For example, the cited portions of Fukami fail to teach or disclose a barrier configured to collect liquid escaping from the localized area, the barrier surrounding and spaced apart from the substrate and comprising a projection which projects out above an upper surface of the substrate when the substrate is held on the substrate table and a groove recessed into an upper surface of the substrate table, as recited in claim 1; and fail to teach or disclose collecting liquid escaping from the localized area with a barrier, the barrier surrounding and spaced apart from the substrate and comprising a projection which projects out above an upper surface of the substrate when the substrate is held on the substrate table and a groove recessed into an upper surface of the substrate table, as recited in claim 19.

First, there is no indication that the "dividing wall" of Fukami is spaced apart from the substrate. For example, the "dividing wall" of Fukami could be in contact with the substrate (i.e., there is no space between the substrate and the dividing wall). In such an arrangement wherein the "dividing wall" projects up from the upper surface of the substrate table, contrary to the assertion on page 10 of the Office

Action, the substrate can be removed by a conventional substrate pin. See, e.g., pin 10 in U.S. Patent No. 5,717,482.

Even if the "dividing wall" might be spaced apart from the substrate (which Applicant does not concede), there is no indication or suggestion that it projects out above an upper surface of the substrate when the substrate is held on the substrate table. For instance, like the cited portions of Novak '181, the "dividing wall" of Fukami might, at most, be up to the same height as the substrate.

Additionally, the cited portions of Fukami do not appear to provide any teaching regarding, in addition to the recited projection, a groove recessed into an upper surface of the substrate table. The cited portions of Fukami disclose "further provid[ing] a pipe for recovering liquid from within this dividing wall." Fukami, page 23, line 24. However, the cited portions of Fukami do not provide any teaching or disclosure regarding the location or arrangement of its "pipe" (except to state that it is "for recovering liquid from within this dividing wall"). For instance, the other "pipes" referred to in Fukami that are used to recover liquid appear to be suspended above the substrate, such as pipes for discharge 24a and 29a. Thus, the cited portions of Fukami do not appear to be properly combinable with the cited portions of Novak '181 which disclose an entirely different fluid recovery arrangement, namely a second recovery system 256 located in the substrate table.

Claim 28

Applicant submits that the cited portions of Novak '181 and Fukami do not teach or disclose a lithographic apparatus comprising, *inter alia*, a substrate table comprising a barrier configured to collect liquid escaping from the localized area, the barrier surrounding and spaced apart from the substrate and positioned radially outwardly of a drainage ditch surrounding an outer peripheral edge of the substrate, as recited in claim 28.

The Office Action refers to the channel 287 of Novak '181 as corresponding to the claimed draining ditch but does not appear to address a barrier positioned radially outwardly of the drainage ditch. Applicant submits that the cited portions of Novak '181 do not appear to disclose such a barrier.

Further, Applicant submits that the cited portions of Fukami fail to disclose or teach the deficiencies of the cited portions of Novak '181. For example, Applicant

submits that the cited portions of Fukami are silent as to a substrate table comprising a barrier configured to collect liquid escaping from the localized area, the barrier surrounding and spaced apart from the substrate.

First, there is no indication that the "dividing wall" of Fukami is spaced apart from the substrate. For example, the "dividing wall" of Fukami could be in contact with the substrate (i.e., there is no space between the substrate and the dividing wall). In such an arrangement wherein the "dividing wall" projects up from the upper surface of the substrate table, contrary to the assertion on page 10 of the Office Action, the substrate can be removed by a conventional substrate pin. See, e.g., pin 10 in U.S. Patent No. 5,717,482.

Further, there is no indication that the substrate table of Fukami comprises the "dividing wall". It may, for example, extend down over Fukami's Z-stage.

Even if the "dividing wall" might be spaced apart from the substrate and the substrate table of Fukami comprises the "dividing wall" (which Applicant does not concede), there is no indication or suggestion that it is not a channel like the channel 287 of Novak '181. Contrary to the assertion on page 9 of the Office Action, there is no requirement that the "dividing wall" of Fukami project out of the upper surface of the substrate table. Like the channel 287 of Novak '181, it may be a recess that prevents liquid from flowing over the Z-stage. In that case, the cited portions of Fukami would not add anything to the cited portions of Novak '181 as they would essentially teach the same channel arrangement and thus fail to disclose or teach the recited draining ditch and the recited barrier positioned radially outwardly of the drainage ditch.

Further, even if the "dividing wall" of Fukami were not a channel, Applicant respectfully submits a person of ordinary skill in the art having regard to the cited portions of Fukami would not see any use for the "dividing wall" in the system of Novak '181. Novak '181 has a second recovery system 256 (including channel 287) to collect liquid that is not captured by Novak '181's first recovery system 254. Applicant submits that a person of ordinary skill in the art would perceive the "dividing wall" of Fukami as redundant, as a substitute for Novak '181's channel 287, or as a substitute for Novak '181's first recovery system. In the case where the "dividing wall" of Fukami is a substitute for Novak '181's first recovery system 254, it would not be located radially outwardly of channel 287 and thus would fail to disclose

or teach the recited draining ditch and the recited barrier positioned radially outwardly of the drainage ditch. In the case where the "dividing wall" of Fukami is a substitute for Novak '181's first recovery system 254, there would not be a teaching of the recited barrier positioned radially outwardly of the drainage ditch. And, in any other case, a person of ordinary skill in the art would perceive Fukami's "dividing wall" as redundant of two liquid recovery systems in Novak '181 - Novak '181's first recovery system 254 and Novak '181's second recovery system 256 (including channel 287).

Therefore, for at least the above reasons, Applicant submits that a *prima facie* case of obviousness has not been established and that the cited portions of Novak '181, Fukami, or a proper combination therefore fail to disclose or render obvious each and every feature recited by claims 1, 19 and 28. Claims 2, 3, 7-9, 12, 15-18, 20-23, 25, 27, 29, 30, 32, 34-39 and 44-47 depend from claims 1, 19 and 28 respectively, and are patentable for at least the same reasons provided above related to claims 1, 19 and 28 respectively, and for the additional features recited therein. As a result, Applicant respectfully submits that the rejection under 35 U.S.C. §103(a) of claims 1-3, 7-9, 12, 15-23, 25, 27-30, 32, 34-39 and 44-47 in view of Novak '181 and Fukami should be withdrawn and the claims be allowed.

Conclusion

Having addressed each of the foregoing rejections, it is respectfully submitted that a full and complete response has been made to the outstanding Office Action and, as such, the application is in condition for allowance. Notice to that effect is respectfully requested.

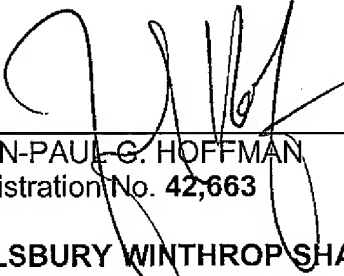
If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

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Respectfully submitted,

By:



JEAN-PAUL G. HOFFMAN
Registration No. 42,663

Customer No. 00909

PILLSBURY WINTHROP SHAW PITTMAN LLP
P.O. Box 10500
McLean, Virginia 22102
Main: 703-770-7900
Direct Dial: 703-770-7794
Fax: 703-770-7901